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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,316	12/02/2003	Folkert Horst	04518/0200617-US0	9710

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EXAMINER	
GIBSON, ERIC M	
ART UNIT	**PAPER NUMBER**
3661	

DATE MAILED: 01/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/728,316	HORST, FOLKERT	
	Examiner	Art Unit	
	Eric M. Gibson	3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/10/04, 12/02/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitation "the remote control" in line 2-3. There is insufficient antecedent basis for this limitation in the claim. The claim recites "a plurality or remote control units" in line 1. It is not known which of the plurality the limitation is referencing.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 5, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Horst et al. (US 20020152008A1).

Per claims 1 and 2, Horst teaches a system for remotely controlling a locomotive including a remote control unit (104, figure 1), a repeater module (102, figure 1), and a trail controller positioned onboard the locomotive (106, figure 1). The "adapted for" language in the claims is merely intended use and is not given patentable weight.

Per claims 5 and 6, Horst teaches radio frequency communication.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horst et al. (US 20020152008A1) in view of Nichols et al. (US005039038A).

Per claim 1, Horst teaches a system for remotely controlling a locomotive including a remote control unit (104, figure 1), a repeater module (102, figure 1), and a trail controller positioned onboard the locomotive (106, figure 1). Horst teaches that the repeater receives, amplifies, and retransmits the signal (page 3, [0029]), but does not teach that the repeater is "adapted for" retransmitting the signal at a second time interval. Nichols teaches a railroad communication system that includes a repeater for receiving, amplifying, and retransmitting a remote signal in a locomotive control system that further teaches using non-overlapping time intervals in order to prevent radio communication interference (column 4, lines 22-44). It would have been obvious to one of ordinary skill in the art, at the time of invention, to retransmit a signal at a second, non-overlapping time interval in the system of Horst, in order to prevent radio communication interference, as taught by Nichols.

Per claim 2, Nichols teaches that non-overlapping time intervals are to be used to respond to commands (column 4, lines 22-44).

Per claims 3 and 4, Nichols teaches only preventing communication from being on the same interval at the same time, it does not prevent using an interval that overlaps with a previously used interval, as long as it is not currently being broadcast on that interval.

Per claims 5 and 6, Horst teaches radio frequency communication.

Per claims 7 and 8, using sub-intervals of a communications channel would have been well known to one of ordinary skill in the art of communications at the time of the invention. The knowledge known to one of ordinary skill in the art at the time of the invention, relates generally to frequency channel allocation that is applicable to any specific application, such as that used in a locomotive system.

Per claim 9, Horst teaches a system for remotely controlling a locomotive including a remote control unit (104, figure 1), a repeater module (102, figure 1), and a trail controller positioned onboard the locomotive (106, figure 1). Horst teaches that the repeater receives, amplifies, and retransmits the signal (page 3, [0029]), but does not teach that the repeater is "adapted for" retransmitting the signal at a second time interval. Nichols teaches a railroad communication system that includes a repeater for receiving, amplifying, and retransmitting a signal in a locomotive control system that further teaches using non-overlapping time intervals in order to prevent radio communication interference (column 4, lines 22-44). It would have been obvious to one of ordinary skill in the art, at the time of invention, to retransmit a signal at a second,

non-overlapping time interval in the system of Horst, in order to prevent radio communication interference, as taught by Nichols.

Per claim 10, Horst teaches radio frequency communication.

Per claim 11, Horst teaches a method for remotely controlling a locomotive including a remote control unit (104, figure 1), a repeater module (102, figure 1), and a trail controller positioned onboard the locomotive (106, figure 1). Horst teaches that the repeater receives, amplifies, and retransmits the signal (page 3, [0029]), but does not teach retransmitting the signal at different time intervals. Nichols teaches a railroad communication system that includes a repeater for receiving, amplifying, and retransmitting a signal in a locomotive control system that further teaches using several non-overlapping time intervals in order to prevent radio communication interference (column 4, lines 22-44). It would have been obvious to one of ordinary skill in the art, at the time of invention, to retransmit a signal at different, non-overlapping time intervals in the method of Horst, in order to prevent radio communication interference, as taught by Nichols.

Per claim 12, Nichols teaches only preventing communication from being on the same interval at the same time, it does not prevent using an interval that overlaps with a previously used interval, as long as it is not currently being broadcast on that interval.

Per claim 13, Horst teaches radio frequency communication.

Per claims 14-16, using sub-intervals of a communications channel would have been well known to one of ordinary skill in the art of communications at the time of the invention. The knowledge known to one of ordinary skill in the art at the time of the

invention, relates generally to frequency channel allocation that is applicable to any specific application, such as that used in a locomotive system.

Per claim 17, Nichols teaches that "alternatively" the intervals may be assigned randomly (column 4, lines 40-44). This necessarily implies that otherwise, they are assigned manually.

Per claims 18 and 19, the transmission of at different time intervals necessitates a means for providing a reference time. A GPS unit is commonly found on vehicles and is capable of serving a reference time function.

Per claim 20, Horst teaches a method for remotely controlling a locomotive including a remote control unit (104, figure 1), a repeater module (102, figure 1), and a trail controller positioned onboard the locomotive (106, figure 1). Horst teaches that the repeater receives, amplifies, and retransmits the signal (page 3, [0029]), but does not teach assigning the signal at different time intervals. Nichols teaches a railroad communication system that includes a repeater for receiving, amplifying, and retransmitting a signal in a locomotive control system that further teaches using several non-overlapping time intervals in order to prevent radio communication interference (column 4, lines 22-44). It would have been obvious to one of ordinary skill in the art, at the time of invention, to retransmit a signal at different, non-overlapping time intervals in the method of Horst, in order to prevent radio communication interference, as taught by Nichols.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kull (US005681015A) teaches a radio-based electro-pneumatic control communications system. Horst et al. (CA2120454A1) teaches a remote control system for a locomotive. Horst et al. (CA2248526A1) teaches a method and apparatus for automatic repetition rate assignment in a remote control system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric M. Gibson whose telephone number is (571) 272-6960. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EMG

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PRIMARY EXAMINER